

- 1 75. A polymer product made by polymerizing the composition of claim 59.
- 1 76. A polymer product made by polymerizing the composition of claim 65.
- cl
- 1 77. A curable monomer composition for making a linear polymer for optical
2 products comprising the composition of claim 59 and which is solution
3 polymerized or bulk polymerized.
- 1 78. A linear polymer product made by polymerizing the composition of claim
- 2 77.--.

REMARKS

The subject application is a continuation application of parent application Serial No. 08/425,958 filed on April 19, 1995. In the parent application conflicting subject matter was indicated with U.S. Patent No. 5,736,609 ('609) issued April 7, 1998 to Irizato et al. and assigned to Mitsui Toatsu Chemicals, Inc. To overcome said conflicting claims, the claims in the parent application were amended to specifically exclude the type of polythiol monomer defined and claimed in the '609 patent. A Notice of Allowance was received for the amended claims and a patent is expected to issue shortly.

Applicants have filed the subject application to copy all the claims of the '609 patent and the claims 23-58 added in the Preliminary Amendment for the subject application correspond exactly to claims 1-36 of the '609 patent. Further, the

original claims 1-22 of the parent application were continued in the subject continuation application.

In the Office Action the Examiner has rejected claims 1-22 under 35 USC 112, second paragraph, for a number of different reasons. Applicants have canceled claims 1-22 and have substituted therefor claims 59-78. Claims 59-78 parallel claims 1-22 and were amended to overcome the objections noted by the Examiner. The specification was also amended to identify the catalysts dibutyltinlaurate and tributylamine on page 14, line 18. The dibutyltinlaurate has support in the examples and tributylamine in the original claims. It is respectfully submitted that claims 59-78 are now proper under 35 USC 112, second paragraph.

Regarding the rejection of claims 1-22 under the judicially creative doctrine of obviousness-type double patenting as being unpatentable over claims 82-105 of co-pending application no. 08/425,958, it is respectfully submitted that Applicants will file a Terminal Disclaimer when allowable subject matter is indicated.

Claims 1-3, 11-14, 19, 21 and 22 have been rejected under 35 USC 102(b) as being anticipated by Skinner et al. U.S. Patent No. 4,128,600. Applicants' invention as now defined claims curable monomer compositions consisting essentially of a polyisocyanate, a polyene wherein the polyene contains only vinyl functional groups and a polythiol monomer. The compositions are cured to produce a terpolymer resin which is optically clear. In Skinner et al., curable resin compositions are prepared containing a radiation-sensitive reactive diluent and a saturated polyol. Curing is accomplished in two separate polymerization reaction steps using two polymerization reactions. Applicants' terpolymer system consists of one homogeneous component which is optically clear rather than Skinner et al. where a

mixture of polymers is formed which is quite distinct and different from Applicants' claimed composition, product and the process for making the product. Also, Applicants' composition does not employ a polyol as in Skinner et al. It is respectfully submitted that claims 59-78 are allowable over Skinner et al.

Former claim 15, now claim 71, has been rejected under 35 USC 103(a) as being unpatentable over Skinner et al. Claim 71 depends indirectly on claim 59 and it is respectfully submitted it is patentable over Skinner et al. as a preferred embodiment of claim 59.

Former claim 8, now claim 64, has been rejected under 35 USC 112, second paragraph, as improperly defining the Markush group. Claim 64 has been amended to indicate that the compound represented by the formula is a polythiol and it is respectfully submitted that this objection has been overcome.

Claims 1-8, 11-13, 19, 21 and 22 are rejected under 35 USC 102(b) as being anticipated by Goyert et al. U.S. Patent No. 4,762,884. It is respectfully submitted that Goyert et al., as Skinner et al., produces an interpenetrating network type polymer system containing two polymer fractions, each fraction being made by a separate polymerization reaction and is not directed to optically clear resins as in Applicants' terpolymer resin. Goyert et al. shows a mixture of a preferred thermoplastic polyurethane resin and an acrylate which is then cross-linked wherein the acrylic component reacts with itself resulting in a polymer network where no chemical bond is formed between the two polymeric components. Accordingly, Goyert et al., if anything, forms a polyurethane polymer chain link having attached thereto polythio ether links. Again, Goyert et al. forms an interpenetrating polymer system in two separate steps by two separate chemical polymerization reactions.

Thus, it is respectfully submitted that the claims are properly allowable over Goyert et al.

Claims 1-9 and 11-22 have been rejected under 35 USC 103(a) as being unpatentable over Okawa U.S. Patent No. 5,236,967 in view of Kajimoto et al. U.S. Patent No. 4,689,387 or Kanemura et al. U.S. Patent No. 4,775,733 or Nagata et al. U.S. Patent No. 5,084,545.

Applicants' terpolymer is different in both a technical aspect and patentability aspect from the polymer of the Okawa et al. reference. The Okawa patent reacts two components, to wit, a polythiol component with a polyene component to form thioether links in the polymer chain. There is no reaction of a polythiol with a polyisocyanate as in Applicants' process. Accordingly, the Okawa et al. patent merely forms a copolymer having thioether links and is not a terpolymer. The Okawa patent is therefore completely different from the random terpolymer of Applicants' wherein blocks of thioether and blocks of thiourethane links are present along the terpolymer chain. It should also be appreciated that the Okawa et al. reaction mixture of two monomers is completely different from Applicants' reaction mixture of three different monomers and that a different reaction occur during the polymerization reaction. Again, there is no reaction of a polyisocyanate group with a polythiol group.

The secondary references to Kajimoto et al., Kanemura et al. and Nagata et al. all disclose production of optical lenses by the reaction of a polyisocyanate with a thiol containing reactant. There is no disclosure therein, however, to form terpolymers by reacting said monomers with polyenes. It is respectfully submitted that to take the position it would be obvious to add polyene to the secondary

reference reaction mixture and/or to add polyisocyanate to the Okawa et al. reaction mixture is technically unwarranted.

In summary, it is respectfully submitted that Applicants' invention comprising a three monomer system with three monomers in which three monomers react in a single polymerization reactions and forms a terpolymer having blocks and links of thioether and thiourethane groups is patentable over the references.

Claims 1-6, 8, 11-13, 19, 21 and 22 have been rejected under 35 USC 102(e) as being anticipated by Sasagawa et al. U.S. Patent No. 5,578,658. The claims have been amended and it is respectfully submitted now patentably distinguish over Sasagawa et al. The unsaturated compound required by Sasagawa et al. has in a molecule at least one functional group selected from a hydroxyl group or a mercapto group and at least one functional group selected from a vinyl group. Applicants' composition and process as now claimed define the polyene monomer as a polyene containing only vinyl groups and the monomer therefore does not contain a hydroxyl group or a mercapto group. Applicants have disclosed in the specification such monomers as now claimed, to wit, pentaerythritol tetraacrylate, on page 5, lines 16 and 17. It is respectfully submitted therefore that the claims are properly allowable over Sasagawa et al.

Claims 7, 9, 10, 14-18 and 20 have been rejected under 35 USC 103(a) as being unpatentable over Sasagawa et al. These claims are preferred embodiments and are respectfully submitted to be properly allowable over Sasagawa et al. as discussed hereinabove.

New claims 23-58 have been rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way

as to reasonably convey to one skilled in the relevant arts that the inventors at the time the application was filed had possession of the claimed invention. The Examiner has not found support for the range of polythiol compound represented by formula 1 within claims 23, 27 and 55. Also clear support has not been found for the terminology "neither a hydroxyl group nor a mercapto group" within claims 23, 27 and 55. Also, the Examiner has indicated that support has not been found for the subject matter in claims 25, 26, 29 and 30.

The following direct comparison of the '609 claim terms with the specification of the subject patent application will it is respectfully submitted provide the necessary support for both the '609 patent and subject patent application claiming the same invention. Also attached hereto and made a part hereof is a "Declaration Under 37 CFR § 1.132" of one of the inventors verifying the side-by-side comparison of the inventions.

The subject invention is based on the discovery of forming optical polymers
by reacting polythiols, polyenes and polyisocyanates. The '609 patent reacts these monomers as does the subject patent application. The required polythiol of the '609 patent while providing a formula (Formula I) which shows a wide variety of polythiols, encompasses a specific polythiol disclosed by Applicants. Likewise, the '609 patent claims a polyene which does not contain a hydroxy group or a mercapto group. Applicants' application also discloses such a polyene. The '609 patent claims that hydroxy containing polythiols may be used in a mixture with a polythiol. Applicants' application likewise discloses such polythiol mixtures. A ratio of functional groups is disclosed in both the '609 patent and the subject patent application.

I. The following is the basis upon which a Declaration of Interference Under 37 CFR § 1.607 is sought.

For clarity, the following correspondence between the claims of the subject application and claims of the '609 patent are presented as follows:

CLAIMS OF SUBJECT APPLICATION	CLAIMS OF U.S. PATENT NO. 5,736,609
Claim 23	Claim 1
Claim 24	Claim 2
Claim 25	Claim 3
Claim 26	Claim 4
Claim 27	Claim 5
Claim 28	Claim 6
Claim 29	Claim 7
Claim 30	Claim 8
Claim 31	Claim 9
Claim 32	Claim 10
Claim 33	Claim 11
Claim 34	Claim 12
Claim 35	Claim 13
Claim 36	Claim 14
Claim 37	Claim 15
Claim 38	Claim 16
Claim 39	Claim 17

CLAIMS OF SUBJECT APPLICATION	CLAIMS OF U.S. PATENT NO. 5,736,609
Claim 40	Claim 18
Claim 41	Claim 19
Claim 42	Claim 20
Claim 43	Claim 21
Claim 44	Claim 22
Claim 45	Claim 23
Claim 46	Claim 24
Claim 47	Claim 25
Claim 48	Claim 26
Claim 49	Claim 27
Claim 50	Claim 28
Claim 51	Claim 29
Claim 52	Claim 30
Claim 53	Claim 31
Claim 54	Claim 32
Claim 55	Claim 33
Claim 56	Claim 34
Claim 57	Claim 35
Claim 58	Claim 36

II. Identification Of Patent With Which Interference Is Sought

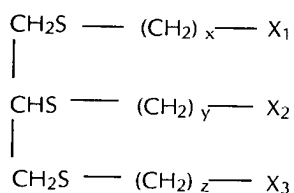
Applicants request declaration of an interference between the subject application and Irizato et al. U.S. Patent No. 5,736,609 filed as application no.

663,734 on June 14, 1996, issued April 7, 1998 and assigned to Mitsui Toatsu Chemicals, Inc.

III. Proposed Count

Applicants request declaration of an interference on the basis of the following proposed count, which corresponds exactly to claim 1 of the Irizato et al. patent:

A sulfur-containing urethane resin composition which comprises a polythiol compound represented by formula (1):



wherein X_1 , X_2 and X_3 each is a hydrogen atom or a mercapto group; x , y and z each is an integer of 0 to 8; and in their combinations, formula (1) has at least two mercapto groups,

a polyiso(thio)cyanate compound, and a compound having two or more reactive unsaturated groups and neither a hydroxyl group nor a mercapto group in an amount of 30 to 70% by weight based on the total weight of the composition.

IV. Identification Of Claims In Patent Corresponding To Proposed Count

Applicants believe that claims 1-36 of the Irizato et al. patent correspond to the proposed count.

V. Identification Of Claims In Application Corresponding To Proposed Account

Applicants believe that claims 23-58 of the subject application correspond to the proposed count.

VI. Application Of The Terms Of The Claims To Disclosure Of The Subject Application

The terms of the claims of the subject application identified as corresponding to the proposed account may be applied to disclosure of the subject application as follows:

CLAIM TERMS	DISCLOSURE IN APPLICATION
<p>Claim 23 - A sulfur-containing urethane resin composition which comprises</p> <p>a polythiol compound represented by formula (1):</p> $ \begin{array}{c} \text{CH}_2\text{S} - (\text{CH}_2)_x - \text{X}_1 \\ \\ \text{CHS} - (\text{CH}_2)_y - \text{X}_2 \\ \\ \text{CH}_2\text{S} - (\text{CH}_2)_z - \text{X}_3 \end{array} \quad (1) $ <p>wherein X_1, X_2 and X_3 each is a hydrogen atom or a mercapto group; x, y and z each is an integer of 0 to 8; and in their combinations, formula (1) has at least two mercapto groups,</p>	<p>Title: Optical Terpolymer of Polyisocyanate, Polythiol and Polyene Monomers.</p> <p>Page 5, lines 14-15: "A preferred polymer is made by the reaction of a polyacrylate, a polyisocyanate monomer and a polythiol monomer.</p> <p>Page 9, line 23: 1,2,3-propanetrithiol.</p> <p>Page 5, lines 14-15: "A preferred polymer is made by the reaction of a polyacrylate, a polyisocyanate monomer and a polythiol monomer.</p>

CLAIM TERMS	DISCLOSURE IN APPLICATION
a polyiso(thio)cyanate compound,	Page 5, lines 6-7: a polyisocyanate or polyisothiocyanate monomer or a polyisocyanate monomer containing at least one isothiocyanate group.
and a compound having two or more reactive unsaturated groups and neither a hydroxyl group nor a mercapto group in an amount of 30 to 70% by weight based on the total weight of the composition.	Page 5, lines 10-13: For convenience, the term polyisocyanate will be meant to include polyisocyanate, polyisothiocyanate, and polyisocyanate monomers containing at least one isothiocyanate group, or mixtures thereof. Page 8, lines 6-7: 1,6-hexane-diacrylate or -dimethacrylate. Page 16, line 28: 2. PETA for pentaerythritol tetraacrylate. Page 11, lines 6-12: The monomers may be used in widely varying amounts depending on the resin properties and optic product properties desired. In general, the curable composition comprises, by weight, polyisocyanate monomer in an amount of about 2 to 70%, preferably 10 to 30%; polyene monomer in an amount of about 5 to 70%, preferably 10 to 40%; and an active hydrogen containing monomer in an amount of about 10 to 60%, preferably 20 to 50%. Higher or lower amounts may be employed for certain applications.

CLAIM TERMS

DISCLOSURE IN APPLICATION

Claim 24 - The sulfur-containing urethane resin composition according to claim 23 wherein the amount of the compound having two or more reactive unsaturated groups is in the range of 30 to 50% by weight based on the total weight.

Page 11, lines 6-12: The monomers may be used in widely varying amounts depending on the resin properties and optic product properties desired. In general, the curable composition comprises, by weight, polyisocyanate monomer in an amount of about 2 to 70%, preferably 10 to 30%; polyene monomer in an amount of about 5 to 70%, preferably 10 to 40%; and an active hydrogen containing monomer in an amount of about 10 to 60%, preferably 20 to 50%. Higher or lower amounts may be employed for certain applications.

Claim 25 - The sulfur-containing urethane-based resin composition according to claim 23 which contains another polythiol compound or a thiol compound having a hydroxyl group in addition to the polythiol of formula (1).

Page 11, lines 4-5: The active hydrogen containing compounds may be used singly or in combination as a mixture.

Claim 26 - The sulfur-containing urethane resin composition according to claim 25 wherein the polyiso(thio)cyanate compound, the compound having the reactive unsaturated groups, the polythiol of formula (1), and the other polythiol compound or the thiol compound having the hydroxyl group is such that a functional group molar ratio of {the iso(thio)cyanate group + the reactive unsaturated group} / {the mercapto group + the hydroxyl group} is in the range of 1.0 to 3.0.

Page 11, line 13-20: The proportions of the monomers may likewise range widely depending on the polymer properties desired. In general, the ratio of the NCO/NCS groups to the active hydrogen containing groups is about 0.05 to 0.9 preferably 0.2 to 0.8. The ratio of vinyl groups to active hydrogen containing groups is about 0.1 to 0.95, preferably 0.2 to 0.7. The ratio of NCO or NCS groups and vinyl groups to -SH group (-NCO or NCS + vinyl)/-SH is preferably in the range of 1.05 to 2.0. This ratio will ensure reduction of free-SH groups in the end product. Therefore it will enhance weathering stability of the end product.

CLAIM TERMS	DISCLOSURE IN APPLICATION
<p>Claim 27 - A sulfur-containing urethane resin composition which comprises</p> <p>a polythiol compound represented by formula (1):</p> $ \begin{array}{c} \text{CH}_2\text{S} - (\text{CH}_2)_x - \text{X}_1 \\ \\ \text{CHS} - (\text{CH}_2)_y - \text{X}_2 \\ \\ \text{CH}_2\text{S} - (\text{CH}_2)_z - \text{X}_3 \end{array} \quad (1) $ <p>wherein X_1, X_2 and X_3 each is a hydrogen atom or a mercapto group; x, y and z each is an integer of 0 to 8; and in their combinations, formula (1) has at least two mercapto groups,</p> <p>a polyiso(thio)cyanate compound,</p>	<p>Title: Optical Terpolymer of Polyisocyanate, Polythiol and Polyene Monomers.</p> <p>Page 5, lines 14-15: "A preferred polymer is made by the reaction of a polyacrylate, a polyisocyanate monomer and a polythiol monomer.</p> <p>Page 9, line 23: 1,2,3-propanetrithiol.</p> <p>Page 5, lines 14-15: "A preferred polymer is made by the reaction of a polyacrylate, a polyisocyanate monomer and a polythiol monomer.</p> <p>Page 5, lines 6-7: a polyisocyanate or polyisothiocyanate monomer or a polyisocyanate monomer containing at least one isothiocyanate group.</p> <p>Page 5, lines 10-13: For convenience, the term polyisocyanate will be meant to include polyisocyanate, polyisothiocyanate, and polyisocyanate monomers containing at least one isothiocyanate group, or mixtures thereof.</p>

CLAIM TERMS

DISCLOSURE IN APPLICATION

and a compound having two or more reactive unsaturated groups and neither a hydroxyl group nor a mercapto group in an amount of 10 to 70% by weight based on the total weight of the composition,

Page 8, lines 6-7: 1,6-hexane-diacrylate or -dimethacrylate.

Page 16, line 28: 2. PETA for pentaerythritol tetraacrylate.

Page 11, lines 6-12: The monomers may be used in widely varying amounts depending on the resin properties and optic product properties desired. In general, the curable composition comprises, by weight, polyisocyanate monomer in an amount of about 2 to 70%, preferably 10 to 30%; polyene monomer in an amount of about 5 to 70%, preferably 10 to 40%; and an active hydrogen containing monomer in an amount of about 10 to 60%, preferably 20 to 50%. Higher or lower amounts may be employed for certain applications.

and a photopolymerization catalyst.

Pages 11-16, lines 35-36 and 1-2: The monomer composition to be subjected to a polymerization reaction can also contain conventional additives such as an antistatic agent, a heat stabilizer, an ultraviolet absorbent, an antioxidant, dyes and/or one of more other auxiliary additives in accordance with the intended end use of the terpolymer to be formed.

Page 13, lines 3-6: The monomer mixture for casting or polymerization may be mixed together with additives such as a lubricant, a mold releasing agent, polymerization initiator, catalyst, etc. preferably under non-reacting conditions, degassed and reacted using conventional techniques known in the art.

CLAIM TERMS

DISCLOSURE IN APPLICATION

Claim 28 - The sulfur-containing urethane resin composition according to claim 27 wherein the amount of the compound having two or more reactive unsaturated groups is in the range of 30 to 50% weight based on the total weight.

Page 11, lines 6-12: The monomers may be used in widely varying amounts depending on the resin properties and optic product properties desired. In general, the curable composition comprises, by weight, polyisocyanate monomer in an amount of about 2 to 70%, preferably 10 to 30%; polyene monomer in an amount of about 5 to 70%, preferably 10 to 40%; and an active hydrogen containing monomer in an amount of about 10 to 60%, preferably 20 to 50%. Higher or lower amounts may be employed for certain applications.

Claim 29 - The sulfur-containing urethane resin composition according to claim 27 which contains another polythiol compound or a thiol compound having a hydroxyl group in addition to the polythiol of formula (1).

Page 11, lines 4-5: The active hydrogen containing compounds may be used singly or in combination as a mixture.

Claim 30 - The sulfur-containing urethane resin composition according to claim 29 wherein the polyiso(thio)cyanate compound, the compound having the reactive unsaturated groups, the polythiol of formula (1) and the other polythiol compound or the thiol compound having the hydroxyl group is such that a functional group molar ratio of {the iso(thio)cyanate group + the reactive unsaturated group} / {the mercapto group + the hydroxyl group} is in the range of 1.0 to 3.0.

Page 11, line 13-20: The proportions of the monomers may likewise range widely depending on the polymer properties desired. In general, the ratio of the NCO/NCS groups to the active hydrogen containing groups is about 0.05 to 0.9 preferably 0.2 to 0.8. The ratio of vinyl groups to active hydrogen containing groups is about 0.1 to 0.95, preferably 0.2 to 0.7. The ratio of NCO or NCS groups and vinyl groups to -SH group (-NCO or NCS + vinyl)/-SH is preferably in the range of 1.05 to 2.0. This ratio will ensure reduction of free-SH groups in the end product. Therefore it will enhance weathering stability of the end product.

CLAIM TERMS	DISCLOSURE IN APPLICATION
<p>Claim 31 - A sulfur-containing urethane resin obtained by polymerizing the composition of claim 23.</p>	<p>Page 5, lines 32-35: The mixture is kept cool, e.g., at a temperature below about 15°C for up to 72 hours, preferably 10 to 32 hours and is then cast (cured) at an elevated temperature to produce the optical resin of the invention. A preferred curing process is also disclosed.</p> <p>Page 6, lines 1-5: In another aspect of the invention, the optical resin products may be prepared by casting or other mold type polymerization process to produce a cross-linked resin optical product. The resin can also be formed as a linear thermoplastic polymer which polymer can then be injection molded or compression molded into optical and other products at high production rates.</p> <p>Page 11, lines 21-22: The optical resins and products of this invention may be produced by casting polymerization.</p> <p>Page 16, Examples 1-4.</p>
<p>Claim 32 - A sulfur-containing urethane resin obtained by polymerizing the composition of claim 24.</p> <p>Claim 33 - A sulfur-containing urethane resin obtained by polymerizing the composition of claim 25.</p> <p>Claim 34 - A sulfur-containing urethane resin obtained by polymerizing the composition of claim 26.</p> <p>Claim 35 - A sulfur-containing urethane resin obtained by polymerizing the composition of claim 27.</p> <p>Claim 36 - A sulfur-containing urethane resin obtained by polymerizing the composition of claim 28.</p>	<p>Same as for claim 31.</p> <p>Same as for claim 31.</p> <p>Same as for claim 31.</p> <p>Same as for claim 31.</p> <p>Same as for claim 31.</p>

CLAIM TERMS	DISCLOSURE IN APPLICATION
<p>Claim 37 - A sulfur-containing urethane resin obtained by polymerizing the composition of claim 29.</p> <p>Claim 38 - A sulfur-containing urethane resin obtained by polymerizing the composition of claim 30.</p> <p>Claim 39 - An optical element which comprises the resin of claim 31.</p>	<p>Same as for claim 31.</p> <p>Same as for claim 31.</p> <p>Pages 4-5, lines 33-36 and 1-6: In this invention, it has been discovered that reacting effective amounts of polythiols with both polyenes, preferably with three (3) or higher number of vinyl groups in the monomers, and polyisocyanates results in a new class of terpolymers which are homogeneous systems without any significant phase separation and have enhanced properties for optical applications such as eyeglasses. Among these properties are balanced high refractive index and high Abbe number, enhanced weathering stability and good impact resistance. The subject of this invention are optical resins having a combination of high refractive index and high Abbe number produced from curable or thermoplastic monomer compositions.</p>
<p>Claim 40 - An optical element which comprises the resin of claim 32.</p> <p>Claim 41 - An optical element which comprises the resin of claim 33.</p>	<p>Page 5, lines 21-24: In another aspect of the invention, a process is provided for preparing optical resin products with enhanced optical and physical properties from the composition comprising a polyene monomer, polyisocyanate monomer and active hydrogen groups containing monomer.</p> <p>Pages 16-18, Examples 1-5.</p> <p>Same as for claim 39.</p> <p>Same as for claim 39.</p>

CLAIM TERMS	DISCLOSURE IN APPLICATION
Claim 42 - An optical element which comprises the resin of claim 34.	Same as for claim 39.
Claim 43 - An optical element which comprises the resin of claim 35.	Same as for claim 39.
Claim 44 - An optical element which comprises the resin of claim 36.	Same as for claim 39.
Claim 45 - An optical element which comprises the resin of claim 37.	Same as for claim 39.
Claim 46 - An optical element which comprises the resin of claim 38.	Same as for claim 39.
Claim 47 - A lens which comprises the optical element of claim 39.	Same as for claim 39.
Claim 48 - A lens which comprises the optical element of claim 40.	Same as for claim 39.
Claim 49 - A lens which comprises the optical element of claim 41.	Same as for claim 39.
Claim 50 - A lens which comprises the optical element of claim 42.	Same as for claim 39.
Claim 51 - A lens which comprises the optical element of claim 43.	Same as for claim 39.
Claim 52 - A lens which comprises the optical element of claim 44.	Same as for claim 39.
Claim 53 - A lens which comprises the optical element of claim 45.	Same as for claim 39.
Claim 54 - A lens which comprises the optical element of claim 46.	Same as for claim 39.

CLAIM TERMS

DISCLOSURE IN APPLICATION

Claim 55 - A process for preparing a sulfur-containing urethane resin which comprises

a step of curing by irradiating UV rays or visible rays

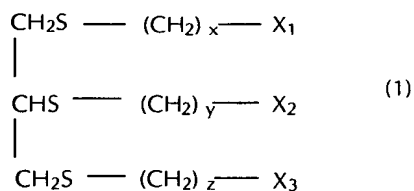
a sulfur-containing urethane resin composition comprising

Pages 4-5, lines 33-36 and 1: In this invention, it has been discovered that reacting effective amounts of polythiols with both polyenes, preferably with three (3) or higher number of vinyl groups in the monomers, and polyisocyanates results in a new class of terpolymers which are homogeneous systems without any significant phase separation and have enhanced properties for optical applications such as eyeglasses.

Pages 11-12, lines 35-36 and 1-2: The monomer composition to be subjected to a polymerization reaction can also contain conventional additives such as an antistatic agent, a heat stabilizer, an ultraviolet absorbent, an antioxidant, dyes and/or one of more other auxiliary additives in accordance with the intended end use of the terpolymer to be formed.

Title: Optical Terpolymer of Polyisocyanate, Polythiol and Polyene Monomers.

a polythiol compound represented by formula (1):



wherein X_1 , X_2 and X_3 each is a hydrogen atom or a mercapto group; x , y and z each is an integer of 0 to 8; and in their combinations, formula (1) has at least two mercapto groups,

Page 5, lines 14-15 "A preferred polymer is made by the reaction of a polyacrylate, a polyisocyanate monomer and a polythiol monomer.

Page 9, line 23: 1,2,3-propanetrithiol.

Page 5, lines 14-15 "A preferred polymer is made by the reaction of a polyacrylate, a polyisocyanate monomer and a polythiol monomer.

CLAIM TERMS

DISCLOSURE IN APPLICATION

a polyiso(thio)cyanate compound,

Page 5, lines 6-7: a polyisocyanate or polyisothiocyanate monomer or a polyisocyanate monomer containing at least one isothiocyanate group.

and a compound having two or more reactive unsaturated groups and neither a hydroxyl group nor a mercapto group in an amount of 10 to 70% by weight based on the total weight of the composition.

Page 5, lines 10-13: For convenience, the term polyisocyanate will be meant to include polyisocyanate, polyisothiocyanate, and polyisocyanate monomers containing at least one isothiocyanate group, or mixtures thereof.

Page 8, lines 6-7: 1,6-hexane-diacrylate or -dimethacrylate.

Page 16, line 28: 2. PETA for pentaerythritol tetraacrylate.

Page 11, lines 6-12: The monomers may be used in widely varying amounts depending on the resin properties and optic product properties desired. In general, the curable composition comprises, by weight, polyisocyanate monomer in an amount of about 2 to 70%, preferably 10 to 30%; polyene monomer in an amount of about 5 to 70%, preferably 10 to 40%; and an active hydrogen containing monomer in an amount of about 10 to 60%, preferably 20 to 50%. Higher or lower amounts may be employed for certain applications.

Claim 56 - A sulfur-containing resin which is obtained by the process of claim 55.

Pages 11 and 12, lines 35-36 and 1-2: The monomer composition to be subjected to a polymerization reaction can also contain conventional additives such as an antistatic agent, a heat stabilizer, an ultraviolet absorbent, an antioxidant, dyes and/or one of more other auxiliary additives in accordance with the intended end use of the terpolymer to be formed.

CLAIM TERMS	DISCLOSURE IN APPLICATION
Claim 57 - An optical element which comprises the resin of claim 56.	Page 11, lines 21-25: The optical resins and products of this invention may be produced by casting polymerization. Any one of molds and frames of various shapes designed in accordance with individual end uses, such as plate-like, lens-like, cylinder-like, prismatic, conical, aspherical, progressive, bifocal and spherical shapes may be used as a casting polymerization vessel.
Claim 58 - A lens which comprises the optical element of claim 57.	Page 11, lines 21-25: The optical resins and products of this invention may be produced by casting polymerization. Any one of molds and frames of various shapes designed in accordance with individual end uses, such as plate-like, lens-like, cylinder-like, prismatic, conical, aspherical, progressive, bifocal and spherical shapes may be used as a casting polymerization vessel.

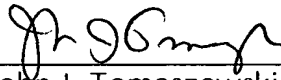
VII. Basis For Judgment Of Priority

The subject application is a continuation of U.S. Serial No. 08/425,958 filed April 19, 1995, which has recently been allowed in a Notice of Allowance dated June 29, 1999. The effective filing date of the subject application is therefore April 19, 1995 based on the subject matter disclosed in U.S. Serial No. 08/425,958.

The basis for judgment of priority relative to the Irizato et al. patent is that the effective filing date of April 19, 1995 of the subject application is prior to the effective filing date of June 14, 1996 of the Irizato et al. patent.

Accordingly, Applicants respectfully request declaration of an interference with Irizato et al. U.S. Patent No. 5,736,609 and/or allowance of claims 59-78.

Respectfully submitted,

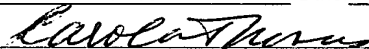


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